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10/597,134

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Padraig Moran

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EXAMINER

FIALKOWSKI, MICHAEL R

ART UNIT

PAPER NUMBER

4173

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/597,134

**Applicant(s)**

MORAN, PADRAIG

**Examiner**

MICHAEL FIALKOWSKI

**Art Unit**

4173

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-13 and 15 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/S5108)  
Paper No(s)/Mail Date August 8 2006  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: In Figure 1, Labels "5","8", and "9"; In Figure 2, Labels "3" and "11"; In Figure 3, Labels "3", "10", and "12". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 1,11, 13, 14, and 15 are objected to because of the following informalities:

Re claim 1, Applicant recites in part on line 5 of the claim, "dynamic Selection of Internal Mobile IP Home Agent based on user Authentication". Examiner suggests

changing to "dynamic selection of Internal Mobile IP Home Agent based on user authentication" to differentiate proper nouns from processes/verbs.

Re claim 11, Applicant recites in part on line 1 of the claim, "The device Claim 9, wherein". Examiner suggests adding "of" or similar to "The device of Claim 9, wherein" to make grammatical sense.

Re claim 13, Applicant recites in part on line 2 of the claim, "accounting is carried out a per Mobile Node basis". Examiner suggests adding "on" or similar to "carried out on a per Mobile Node basis" to make grammatical sense.

Re claims 14 and 15, the numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). No notification of cancellation has been made of originally filed claim 14.

Appropriate correction is required.

***35 USC § 101- Patentable Subject Matter***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

***Claim Rejections - 35 USC § 101***

4. Claims 1-13, and 15 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-13 and 15 are directed to a mobile agent device. The limitations set forth in the claim comprise terminating a Mobile IP and IPSec VPN tunnel, selection of a home agent, tunneling of traffic, and provision of extended authentication are all processes performed by the mobile agent device. It is unclear as to whether these comprising elements of the claim are performed purely in a software module or computer program and are thus software per se. The mobile agent device does not comprise the remotely connected Mobile Node and thus all processes could be performed within a single computer program element and the specification submitted does not disclose the processes in a hardware component. Therefore, Claims 1-13, and 15 are directed to non-statutory subject matter by failing to be a process, machine, manufacture, or composition of matter and fail to meet the requirements set forth in 35 U.S.C. § 101.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-13, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re Claim 1, Claim 1 recites the limitation "the assigned Internal Mobile Home Agent" in line 6. There is insufficient antecedent basis for this limitation in the claim which renders the claim and all dependent claims indefinite. It is unclear whether "the assigned Internal Mobile Home Agent" is the same as the "Internal Mobile IP Home Agent" in line 5.

Re Claim 1, Claim 1 recites the limitation "this Mobile Node" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether "this Mobile Node" is the same as "a remotely connecting Mobile Node" in line 3.

Regarding Claim 1, the phrase "or similar" in line 10 renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or similar"), thereby rendering the scope of the claim(s) unascertainable.

Re Claims 2,6, and 7: Claims 2,6, and 7 recite the limitation "the Internal Home Agent" beginning on line 2. There is insufficient antecedent basis for this limitation in the claims. It is unclear whether "the Internal Home Agent" is the same as "Internal Mobile IP Home Agent" in Claim 1, line 5.

Re Claim 4, Claim 4 recites the limitation "the Mobile Node" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether "the Mobile Node" is the same as "a remotely connecting Mobile Node" in Claim 1, line 3.

Re Claims 8,9,10,11,15: Claims 8,9,10,11,15 recite the limitation "the mobile node" beginning on line 2. There is insufficient antecedent basis for this limitation in the

claims. It is unclear whether "the mobile node" is the same as "a remotely connecting Mobile Node" in Claim 1, line 3.

Re Claim 12, Claim 12 recites the limitation "the internal home agent" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether "the internal home agent" is the same as the "Internal Mobile IP Home Agent" in Claim 1, line 5.

Re Claim 12, Claim 12 recites the limitation "internal network" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1,3-5,8 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al (2004/0120295).

Re claim 1, Liu et al discloses a mobile agent device (VPN gateway / MIP - Mobile IP proxy) in a Mobile Virtual Private Network, said device comprising:

a. termination of Mobile IP tunnel (See Figure 2B, label 242) from a remotely connecting Mobile Node (mobile node);

- b. termination of an IPSec VPN tunnel (See Figure 2B, label 248) from the remotely connecting Mobile Node;
- c. dynamic Selection of Internal Mobile IP Home Agent (home agent) based on user Authentication (associates mobile node with home agent by binding addresses [0042]-[0043]);
- d. tunneling of traffic (packet) to (VPN gateway / MIP proxy) and/or from the assigned Internal Mobile Home Agent (home agent) for this Mobile Node ([0046]); and
- e. provision of extended authentication (reply message), after Mobile IP connection establishment, and during the VPN negotiation phase, based on extra user credentials, one-time-password mechanism or similar (willingness of the home agent to process data) ([0044]).

Re claim 3, Liu et al discloses the device wherein the mobile agent device appears as a Mobile IP Home Agent (home agent) towards the remotely connecting Mobile Node (mobile node) (includes a home agent module that emulates a home agent for mobile nodes [0028]).

Re claim 4, Liu et al discloses the device wherein the mobile agent device (Foreign Agent module in MIP proxy) provides a dynamically assigned Mobile IP address (care-of address) to the Mobile Node (via DHCP) , if requested to do so by the Mobile Node (mobile node uses DHCP) ([0024] [0031], for registering with MIP proxy).

Re claim 5, Liu et al discloses the device wherein the mobile agent device provides a termination point (data tunnel is created between mobile node and MIP



proxy) for IKE (Security Association may be created using IKE [0031]) & IPSec VPN connections (See Figure 2B, label 248) from a remotely connecting Mobile Node.

Re claim 8, Liu et al discloses the device wherein traffic can be routed directly from the mobile agent device towards its destination (tunneling can be bypassed), on receipt from the mobile node (IKE data is carried as normal IP traffic [0052]).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al in view of Makineni et al (2002/0066036).

Re claim 2, Liu et al discloses the device of claim 1 as stated above , but does not explicitly disclose wherein the mobile agent device appears as a Mobile IP Foreign Agent towards the Internal Home Agent. However, Makineni et al teaches of a mobile agent device (relay server) appears as a Mobile IP Foreign Agent (Foreign agent) towards (for communicating with) the Internal Home Agent (home server) ([0027]). It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include a foreign agent for communicating with the home agent as taught by Makineni et al in the device of Liu et al in order to conform to the Mobile IP network communication.

Re claim 12, Liu et al discloses the device of claim 1 as stated above, but does not explicitly disclose comprising restriction of user access to the internal home agent or internal network, until extended user authentication is carried out. However, Makineni et al teaches of restriction of user access (ensures the identity of the client) to the internal home agent or internal network, until extended user authentication (relay server authenticates message) is carried out ([0027]). It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include restriction of user access until user authentication is carried out as taught by Makineni et al in the device of Liu et al in order to secure access to an internal network.

11. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al in view of Chowdhury et al (2004/0106393).

Re claim 13, Liu et al discloses the device of claim 1 as stated above, but does not explicitly disclose the device further comprising time and volume based accounting is carried out a per Mobile Node basis. However, Chowdhury et al teaches of a device (HAAA) comprising time (time-of-day, session duration, and timeout lengths) and volume (data volume, data bandwidth) based accounting (determines, delivers, and enforces) is carried out a per Mobile Node (subscriber) basis ([0018]). It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include time and volume accounting as taught by Chowdhury et al in the device of Liu et al in order to enforce different policies based on a mobile node.

12. Claims 6,7,9,10,11,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al in view of Leung et al (2003/0224788).

Re claim 6, Liu et al discloses the device of claim 1 as set forth above, but does explicitly disclose wherein IP encapsulated tunneling is used for transfer of traffic between the mobile agent device and the Internal Home Agent. However, Leung et al teaches IP encapsulated (IP-in-IP) tunneling is used for transfer of traffic between the mobile agent device (care of address, which is for example MIP proxy) and the Internal Home Agent (home agent) ([0043]). It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include IP encapsulation to transfer the traffic between nodes as taught by Leung et al in the device of Liu et al in order to set up communication in a Mobile IP standard (Leung et al [0043]).

Re claim 7, Liu et al discloses the device recited in claim 1 as set forth above, but does explicitly disclose wherein UDP encapsulated tunneling is used for transfer of traffic between the mobile agent device and the Internal Home Agent. However, Leung et al teaches UDP encapsulated (IP-UDP) tunneling is used for transfer of traffic between the mobile agent device (MIP proxy) and the Internal Home Agent (Internal Home Agent) (extension indicates tunnel mode as IP-UDP or IP-IP [0045]). It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include UDP encapsulation to transfer the traffic between nodes as taught by Leung et al in the device of Liu et al in order to communicate through a NAT (Leung et al [0040]).

Re claim 9, Liu et al discloses the device of claim 1 as set forth above, but does explicitly disclose wherein IP encapsulated tunneling is used for transfer of traffic between the mobile node and the mobile agent device. However, Leung et al teaches IP encapsulated (IP –in-IP) tunneling is used for transfer of traffic between the mobile node and the mobile agent device (MIP proxy) ([0055]). It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include IP encapsulation to transfer the traffic between nodes as taught by Leung et al in the device of Liu et al in order to set up communication in a Mobile IP standard (Leung et al [0043]).

Re claim 10, Liu et al discloses the device of claim 1 as set forth above, but does explicitly disclose wherein UDP encapsulated tunneling is used for transfer of traffic between the mobile node and the mobile agent device. However, Leung et al teaches UDP encapsulated (IP–in-UDP) tunneling is used for transfer of traffic between the mobile node (mobile node) and the mobile agent device (MIP proxy) [0048]. It would have been obvious for one of ordinary skill in the art at the time of the invention in the area of mobile networks to include UDP encapsulation to transfer the traffic between nodes as taught by Leung et al in the device of Liu et al in order to communicate through a NAT (Leung et al [0040]).

Re claim 11, note that Liu modified by Leung et al teaches the device wherein IPSec tunneling is used for protection of the transfer of traffic between the mobile node and the mobile agent device (VPN gateway) (See Figure 4B, label 450), within said encapsulation (packet is encapsulated until steps 460, and 465).

Re claim 15, note that Liu modified by Leung et al teaches the device wherein IPSec tunneling is used for protection of the transfer of traffic between the mobile node and the mobile agent device (VPN gateway) (See Figure 4B, label 450), within said encapsulation (packet is encapsulated until steps 460, and 465).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL FIALKOWSKI whose telephone number is (571)270-5425. The examiner can normally be reached on Monday - Friday 9:30am-7pm EST, alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinhee Lee can be reached on (571)272-1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. F./  
Examiner, Art Unit 4173

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